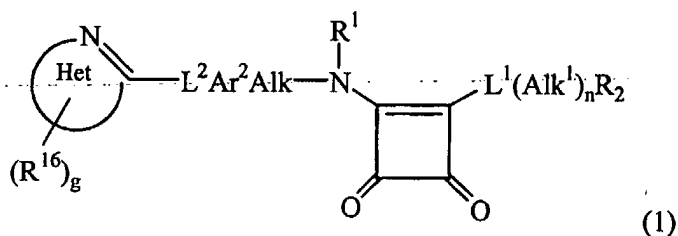


This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (currently amended) A compound of formula (1):



wherein

Het is a bicyclic fused ring heteroaromatic group;

g is zero or the integer 1, 2, 3 or 4;

Each  $R^{16}$ , which may be the same or different, is an atom or group  $-L^3(Alk^2)_tL^4(R^4)_u$ ,

$L^3$  and  $L^4$ , which may be the same or different, are each a covalent bond or a linker atom or group  $-O-$ ,  $-S-$ ,  $-C(O)-$ ,  $-C(O)O-$ ,  $-OC(O)-$ ,  $-C(S)-$ ,  $-S(O)-$ ,  $-S(O)_2-$ ,  $-N(R^8)-$ ,  $-N(R^8)O-$ ,  $-N(R^8)N-$ ,  $-CON(R^8)-$ ,  $-OC(O)N(R^8)-$ ,  $-CSN(R^8)-$ ,  $-N(R^8)CO-$ ,  $-N(R^8)C(O)O-$ ,  $-N(R^8)CS-$ ,  $-S(O)_2N(R^8)-$ ,  $-N(R^8)S(O)_2-$ ,  $-N(R^8)CON(R^8)-$ ,  $-N(R^8)CSN(R^8)-$ , or  $-N(R^8)SO_2N(R^8)-$ ,

$R^8$  is a hydrogen atom or an optionally substituted  $C_{1-6}$ alkyl group,

t is zero or the integer 1,

u is an integer 1, 2 or 3,

$Alk^2$  is an aliphatic or heteroaliphatic chain, and

$R^4$  is a hydrogen or halogen atom or a group selected from an optionally substituted  $C_{1-6}$ alkyl or  $C_{3-8}$  cycloalkyl group,  $-OR^5$  (where  $R^5$  is a hydrogen atom, an optionally

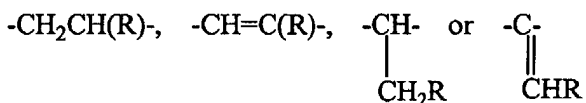
substituted C<sub>1-6</sub>alkyl or C<sub>3-8</sub> cycloalkyl group), -SR<sup>5</sup>, -NR<sup>5</sup>R<sup>6</sup> (where R<sup>6</sup> is as just defined for R<sup>5</sup> and may be the same or different), -NO<sub>2</sub>, -CN, -CO<sub>2</sub>R<sup>5</sup>, -SO<sub>3</sub>H, -SOR<sup>5</sup>, SO<sub>2</sub>R<sup>5</sup>, -SO<sub>3</sub>R<sup>5</sup>, -OCO<sub>2</sub>R<sup>5</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -OCONR<sup>5</sup>R<sup>6</sup>, -CSNR<sup>5</sup>R<sup>6</sup>, -COR<sup>5</sup>, -OCOR<sup>5</sup>, -N(R<sup>5</sup>)COR<sup>6</sup>, -N(R<sup>5</sup>)CSR<sup>6</sup>, -SO<sub>2</sub>N(R<sup>5</sup>)(R<sup>6</sup>), -N(R<sup>5</sup>)SO<sub>2</sub>R<sup>6</sup>, N(R<sup>5</sup>)CON(R<sup>6</sup>)(R<sup>7</sup>) (where R<sup>7</sup> is a hydrogen atom, an optionally substituted C<sub>1-6</sub>alkyl or C<sub>3-8</sub>cycloalkyl group), -N(R<sup>5</sup>)CSN(R<sup>6</sup>)(R<sup>7</sup>) or -N(R<sup>5</sup>)SO<sub>2</sub>N(R<sup>6</sup>)(R<sup>7</sup>),

provided that when t is zero and each of L<sup>3</sup> and L<sup>4</sup> is a covalent bond then u is the integer 1 and R<sup>4</sup> is other than a hydrogen atom;

L<sup>2</sup> is a covalent bond or an atom or group -O-, -S-, -C(O)-, -C(S)-, -S(O)-, -S(O)<sub>2</sub>, -N(R<sup>8</sup>)- or -C(R<sup>8</sup>)(R<sup>8a</sup>)- (where R<sup>8a</sup> is an atom or group as defined for R<sup>8</sup> and may be the same or different);

Ar<sup>2</sup> is an optionally substituted aromatic or heteroaromatic group;

Alk is a chain



in which R is a carboxylic acid (-CO<sub>2</sub>H), a carboxylic acid ester, a carboxylic acid amide, or a carboxylic acid biostere;

R<sup>1</sup> is a hydrogen atom or a C<sub>1-6</sub>alkyl group;

L<sup>1</sup> is a covalent bond or a linker atom or group -O-, -S-, -C(O)-, -C(O)O-, -OC(O)-, -C(S)-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>8</sup>)-, -N(R<sup>8</sup>)O-, -N(R<sup>8</sup>)N-, -CON(R<sup>8</sup>)-, -OC(O)N(R<sup>8</sup>)-, -CSN(R<sup>8</sup>)-, -N(R<sup>8</sup>)CO-, -N(R<sup>8</sup>)C(O)O-, -N(R<sup>8</sup>)CS-, -S(O)<sub>2</sub>N(R<sup>8</sup>)-, -N(R<sup>8</sup>)S(O)<sub>2</sub>-, -N(R<sup>8</sup>)CON(R<sup>8</sup>)-, -N(R<sup>8</sup>)CSN(R<sup>8</sup>)-, or -N(R<sup>8</sup>)SO<sub>2</sub>N(R<sup>8</sup>)-;

Alk<sup>1</sup> is an optionally substituted aliphatic chain;

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Office Action Dated: August 7, 2003

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37 CFR § 1.116

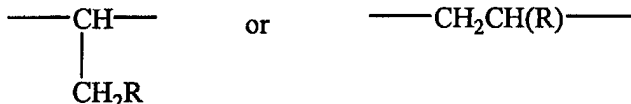
n is zero or the integer 1;

$R^2$  is a hydrogen atom or an optionally substituted heteroaliphatic, ~~C<sub>3-10</sub>cycloalkyl, C<sub>3-10</sub>cycloalkenyl, C<sub>3-10</sub>heterocycloalkyl, C<sub>3-10</sub>heterocycloalkenyl, C<sub>7-10</sub>bicycloalkyl, C<sub>7-10</sub>tricycloalkyl, C<sub>7-10</sub>bicycloalkenyl, C<sub>7-10</sub>tricycloalkenyl, C<sub>7-10</sub>bicycloheteroalkyl, C<sub>7-10</sub>tricycloheteroalkyl, C<sub>7-10</sub>bicycloheteroalkenyl, C<sub>7-10</sub>tricycloheteroalkenyl, C<sub>3-10</sub>cycloaliphatic, C<sub>3-10</sub>heterocycloaliphatic, C<sub>7-10</sub>polycycloaliphatic, C<sub>7-10</sub>heteropolycycloaliphatic~~, aromatic or heteroaromatic group, wherein said heteroaliphatic, heterocycloalkyl, heterocycloalkenyl, bicycloheteroalkyl, tricycloheteroalkyl, bicycloheteroalkenyl and tricycloheteroalkenyl C<sub>3-10</sub>heterocycloaliphatic, and C<sub>7-10</sub>heteropolycycloaliphatic groups contain one, two, three, or four heteroatoms or heteroatom-containing groups as defined for L<sup>3</sup> and L<sup>4</sup>, which may be the same or different;

provided that Het is not a 2,6-naphthyridin-1-yl, isoquinolin-1-yl, 2,7-naphthyridin-1-yl or quinazolin-4-yl group;

and the salts and N-oxides thereof.

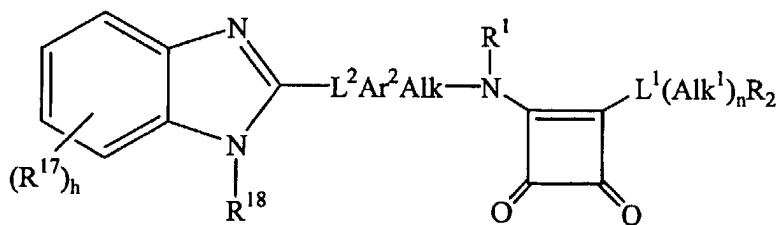
2. (original) A compound according to Claim 1 in which Alk is a chain



3. (original) A compound according to Claim 1 in which R is a carboxylic acid (-CO<sub>2</sub>H) group.

4. (original) A compound according to Claim 1 in which R is an esterified carboxyl group of formula  $\text{-CO}_2\text{Alk}^7$ .
5. (original) A compound according to Claim 1 in which  $\text{R}^1$  is a hydrogen atom.
6. (original) A compound according to Claim 1 in which  $\text{Ar}^2$  is an optionally substituted phenylene group.
7. (original) A compound according to Claim 1 in which  $\text{L}^1$  is a  $\text{-N(R}^8\text{)-}$  group where  $\text{R}^8$  is a hydrogen atom or an optionally substituted  $\text{C}_{1-6}$ alkyl group.
8. (original) A compound according to Claim 7 in which  $\text{R}^8$  is a methyl, ethyl, or n-propyl group.
9. (original) A compound according to Claim 1 in which  $\text{L}^1$  is a covalent bond.
10. (original) A compound according to Claim 1 in which n is the integer 1,  $\text{Alk}^1$  is an optionally substituted straight or branched  $\text{C}_{1-6}$ alkylene chain and  $\text{R}^2$  is a hydrogen atom.
11. (original) A compound according to Claim 10 in which  $\text{Alk}^1$  is a  $\text{-CH}_2\text{-}$ ,  $\text{-CH}_2\text{CH}_2\text{-}$ ,  $\text{-CH}_2\text{CH}_2\text{CH}_2\text{-}$ ,  $\text{-CH(CH}_3\text{)CH}_2\text{-}$  or  $\text{-C(CH}_3\text{)}_2\text{CH}_2\text{-}$  chain.

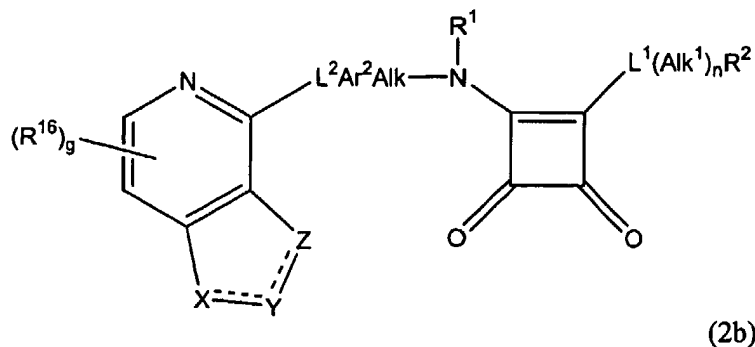
12. (currently amended) A compound according to Claim 1 in which  $L^1$  is a covalent bond,  $n$  is zero and  $R^2$  is an optionally substituted  ~~$C_{5-7}$ heterocycloalkyl or  $C_{5-7}$ heterocycloalkenyl~~  $C_{5-7}$ heterocycloaliphatic group.
13. (original) A compound according to Claim 12 in which  $R^2$  is an optionally substituted piperidinyl, homopiperidinyl, heptamethyleneiminyl, pyrrolidinyl, piperazinyl, homopiperazinyl, morpholinyl or thiomorpholinyl group.
14. (original) A compound according to Claim 1 in which  $L^2$  is an -O- atom or -N( $R^8$ )- group in which  $R^8$  is a hydrogen atom or an optionally substituted  $C_{1-6}$ alkyl group.
15. (previously presented) A compound according to Claim 1 of formula (2a):



wherein:

- $R^{17}$  is an atom or group  $R^{16}$  as previously defined;  
 $h$  is zero or the integer 1, 2 or 3;  
 $R^{18}$  is a hydrogen atom or an atom or group  $R^{16}$  as previously defined;  
and the salts and N-oxides thereof.

16. (previously presented) A compound according to Claim 1 of formula (2b):



wherein:

X, Y and Z are each independently selected from a nitrogen, oxygen or sulphur atom or CH group;

the broken line (---) represents saturation or unsaturation;

and the salts and N-oxides thereof.

17. (original) A compound according to Claim 16 in which X is an O or S atom, Y and Z are each a group CH, a single bond joins X and Y and a double bond joins Y and Z.

18. (currently amended) A compound according to Claim 16 in which Z is an O or S atom, X and Y is are each a CH group, a single bond joins Y and Z and a double bond joins X and Y.

19. (previously presented) A compound which is:

*S*-2- {[2-Dipropylamino)-3,4-dioxo-1-cyclobutenyl]amino}-3- {4-[(1-methylbenzimidazol-2-yl)amino]phenyl} propanoic acid;

*S*-2- {[2-Dipropylamino)-3,4-dioxo-1-cyclobutenyl]amino}-3- {4-[(1-methylbenzimidazol-2-yl)amino]phenyl} propanoic acid;

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*S*-2-{{[2-(2-Methylpiperidin-1-yl)-3,4-dioxo-1-cyclobutenyl]amino}-3-{4-[(1-methylbenzimidazol-2-yl)amino]phenyl}}propanoic acid;

(*S*)-3-[4-(Thiophen[2,3-d]pyrimidin-4-ylamino)phenyl]2-(2-(diethylamino-3,4-dioxocyclobut-1-enylamino)propanoic acid;

and the salts, N-oxides and carboxylic acid esters thereof.

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20. (original) A pharmaceutical composition comprising a compound according to Claim 1 together with one or more pharmaceutically acceptable carriers, excipients or diluents.

21. (previously presented) A method for the treatment of inflammatory arthritis, allograft rejection, diabetes, inflammatory dermatoses, asthma or inflammatory bowel disease comprising administering to a mammal suffering from such a disease or disorder a therapeutically effective amount of a compound according to Claim 1.

22. (canceled)

23. (previously presented) A method according to Claim 21 wherein said inflammatory arthritis is selected from the group consisting of rheumatoid arthritis, vasculitis and polydermatomyositis.

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24. (previously presented) A method according to Claim 21 wherein said inflammatory dermatoses are selected from the group consisting of psoriasis and dermatitis.

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25. (canceled)

26. (canceled)

27. (previously presented) A compound according to claim 19 wherein the carboxylic acid esters are selected from the group consisting of methyl, ethyl, propyl, and i-propyl.



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Paper

# ~~8~~ 8 ~~1/6/03~~  
11 - 6/4/03

Title

✓

Abstract

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Oath

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Priority

~~Major~~ UK

Application

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Drawings

None

Number of claims

25, 26

twenty-five four

CMPD

1-19

COMP

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21, 23, 24

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371	301	244	260.1	183	236	279	115	177	217
379	302	249	261.1	184	237	280	116		211
397	303	250	262.1		237	281	119		309.7
403	304	250	263.1		238	282	121		362.5
412	305	250	264.1		262	283	122		503
418	306	250	265.1		263		113		453
	307	250	266.1		277		133		
	308	250	267.1				138		